

Unified Service Assurance in the 5G Era

A path to zero-touch operations with closed-loop automation

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The problem behind the churn

As 5G networks become a larger part of digital transformation, businesses are having to equip themselves to monitor and manage the complexities and scalability demands that come with it. If a business doesn't have the right set of tools for assuring 5G at scale, then quality of service cannot be guaranteed, and the customer experience will suffer — leading to churn.

Historically, network and service management teams have only had access to siloed legacy software tools, which are costly to operate, lack flexibility, and do not scale – and that's a big problem in face of the more complex, hybrid, and data-intensive environments brought by 5G, IoT, SDN/NFV, cloud, and other next-generation technologies.

Ingredients for solution

To address that problem, while modernizing and future-proofing the business, service management solutions for 5G networks need to be driven by actionable insights and automation.

Automation will help businesses optimize the performance of services and networks, but businesses need automation that goes beyond orchestration of services. It isn't enough to provision a service; automating the way the network identifies and resolves service-impacting incidents in real-time is also very critical — such as a traffic overload that is impacting the quality of services delivered.

Closed-loop assurance – the seamless flow of monitoring, identifying, adjusting, and optimizing the performance of network automatically – is ultimately what will make it all work. A next-generation assurance solution should observe the network, correlate incidents, and provide insights that can drive smart fulfilment, self-scaling, and self-healing actions, resulting in validation and end-to-end service management — eventually leading to zero-touch and self-service.

At its core, closed-loop assurance reduces error, time and effort, and cost for the business.

For an effective digital transformation fit for our modern world, businesses will need a closed-loop assurance solution with capabilities you can't find in legacy systems:

- End-to-end visibility
- Scalability to meet 5G and IoT demands
- Proactive and real-time network and service management
- Greater automation with AIOps
- Major cost-efficiencies
- Legacy tool consolidation
- Seamless integration

Oracle Communications Unified Assurance

Enables 5G transformation through closed-loop assurance

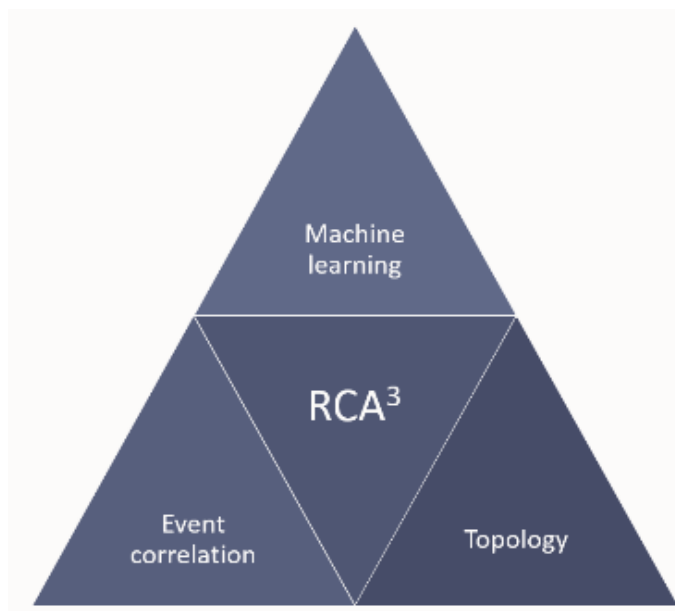
Oracle Communications Unified Assurance provides fault, performance, topology, and service management functionality in a unified, open, and highly performing platform optimized by AIOps. It applies Machine Learning for advanced correlation, root cause analysis and automation across domains — in real-time and at scale.

Oracle Communications Unified Assurance has been designed to address the shortcomings of legacy solutions while leaving the door open for future services. Rather than suppressing event data, Oracle Communications Unified Assurance reveals it in full and uses it for good, to strengthen a company's operations and bottom line.

The hyperscale architecture of Oracle Communications Unified Assurance, Machine Learning, and microservices capabilities are designed to handle the explosion of data brought by 5G and IoT that surpasses the human processing ability — delivering actionable insights and closed-loop service assurance at reduced costs.

With Oracle Communications Unified Assurance, your services are monitored and managed to perform well all the time — no matter the complexity of the environment. If they fail, they are brought back to an operational state with speed and accuracy through a closed loop, reducing downtime.

Oracle Communications Unified Assurance integrates seamlessly with service orchestration engines using standards-based REST APIs. When a virtual service chain is requested, the Oracle Communications Unified Assurance platform dynamically creates a matching service chain and watches the orchestration engine spin up the virtualized network services within their virtual containers. Service chain dashboards are available to integrate into existing orchestration tools to show in real-time the service turn-up (with confirmations). Additionally, turned up services are then monitored as a complete 'end-to-end' service for that customer — meaning that events within the complex tier of servers, virtual machines, and services are all correctly understood and monitored — so when a problem occurs, its impact to the customer is correctly communicated to the teams in the Network Operations Center.



Oracle Communications Unified Assurance across three dimensions

Oracle Communications Unified Assurance delivers across all these dimensions and more. Key capabilities are shown in the following sections.

AIOps and RCA³™: harnessing the power of AI/machine learning

RCA³ is Oracle Communications Unified Assurance's AI-Optimized root cause analysis model that combines 3 different perspectives to quickly pinpoint, analyse, and resolve the root cause of service-impacting events:

1. Unsupervised machine learning
2. Supervised event correlation
3. Topological root cause

RCA³ will correlate events and eliminate noise with precision to ensure operations are focused on the relevant incidents and impacted services. This automated correlation and compression of events into actionable events results in fewer trouble tickets, lower manual efforts, and greater operational efficiency. 90%+ of event-to-ticket compression rates are commonly achieved.

Hyperscale architecture and microservices

Legacy applications are built on traditional architectures that are generally not dynamic and often struggle to scale. Customers also find there to be limited options to enhance and integrate to these traditional solutions and regularly must wait for vendors to create such enhancements and integrations for them.

The Hyperscale Architecture of Oracle Communications Unified Assurance is designed to address these problems. By replacing operating system VMs with containers, microservice applications support extreme amounts of scale with far less dedicated hardware and microservice components, and integrations can be developed and deployed quickly.

Unification and tool consolidation

Oracle Communications Unified Assurance combines fault, performance, topology, and service management capabilities in a single holistic platform, enabling legacy tool consolidation — helping to reduce OPEX and CAPEX.

CAPABILITY	IN ACTION	RESULTS
Fault Management	Unfiltered faults within one solution	Can monitor, detect, analyze, & resolve faults faster with the ability to manipulate, prioritize, and escalate alarms on the fly. Delivers a unified view of the availability and performance of the entire infrastructure on a single screen so immediate action can be taken in one right-click.
Performance Management	Performance metrics are collected from all data source types: network, server, storage, and applications.	End-to-end service performance visibility and monitoring, and real-time reporting to help proactively prevent outages or tackle them before they impact customers.
Topology Management	All data is collected and normalized into a common mapping and visualization model.	Quickly and accurately depict topology changes in near-real-time with a 360° view, greatly simplifying complexities with a single UI, customizable reports, dashboards, and portals.
Service Management	With advanced service thresholding capabilities, it provides a top-down view of customer services.	Ability to make immediate use of existing configurations and data from fault, performance, or topology, allowing for agile service management. Operations can prioritize services to prevent issues that negatively impact customers.

Table 1. The capabilities and results that are enabled by Oracle Communications Unified Assurance

Oracle Communications Unified Assurance can help you evolve from legacy systems

The consequences of network incidents, which are commonly missed with legacy systems, can be very disrupting to businesses. They can cause widespread outages, SLA violations, and customer dissatisfaction, which can lead to churn. Save your systems so you can save your customers.

Proactive monitoring, real-time performance, ML-driven root cause analysis, and predictive analytics can lead to closed-loop assurance and zero-touch automation solutions to address problems before they intrude on your customer's experience.

Oracle Communications Unified Assurance can be deployed to:

- co-exist with, and federate across, existing systems and tools to provide unified network visibility with actionable insights that help transform operations, deliver greater efficiency and deliver a better customer experience
- replace and retire existing systems and tools driving material costs savings through consolidation of tools, people, network integrations, data center servers and space, etc. based on a compelling and quantifiable business case

Success Story

Tier 1 CSP — Faster Time to Market of Virtual Network Services with Oracle Communications Unified Assurance with Closed-Loop Assurance

A market-leading Tier 1 CSP leveraged SDN and NFV to enable the rapid launch of new virtual network services offerings targeted at enterprises — while providing end-to-end service orchestration, NFV/VNF onboarding and testing, and closed-loop service assurance to deliver customer self-service, zero-touch provisioning, and improved SLA performance.

The solution was enabled by the seamless integration of the orchestration of virtual network services with the operational and business support systems — OSS and BSS— via service chains. Incidents were correlated and the root cause identified so that correction action — such as re-instantiating the function, restarting it, or other — could be effectively performed in a closed-loop manner.

By reducing the level of manual intervention in the service lifecycle, virtual services could be more easily offered to a wider range of customers. Oracle Communications Unified Assurance was at the core of the solution's ability to provide closed-loop service assurance.

The benefits of Oracle Communications Unified Assurance

Oracle enables a customer's digital transformation journey toward higher growth, overall efficiency, risk mitigation, reduced costs, and increased productivity — in the simplest, most innovative way possible. With Oracle Communications Unified Assurance, IT and operations teams can keep up in an ever-changing industry, with the latest technology, and help the business grow without fear of service-impacting outages.

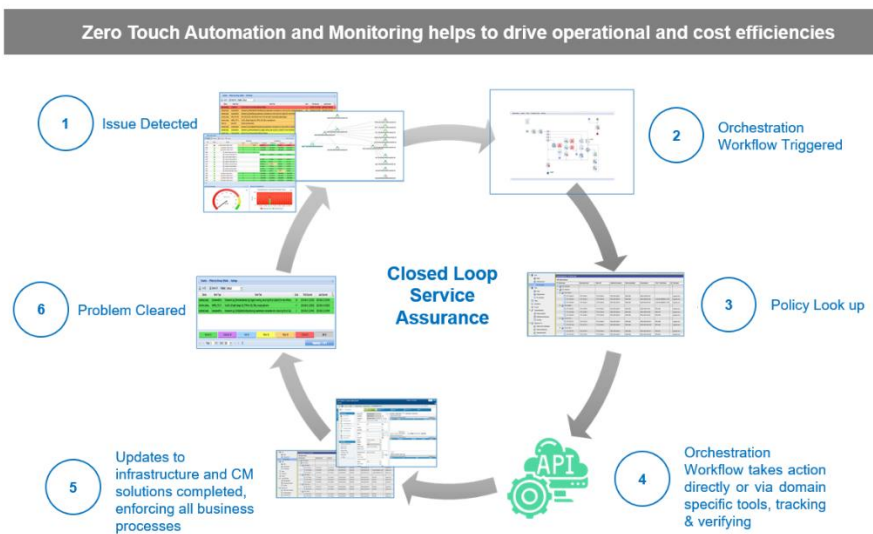


Image 1. 'Zero Touch' Closed Loop Automation

Key Features and Capabilities

- Unified, open platform, built for hyperscale and speed
- Real-time machine learning (ML) insights
- RCA³— Revolutionary, 3-way ML-powered, advanced root cause analysis
- Domain agnostic, scalable data collection
- Enables consolidation of costly legacy, redundant systems
- A trusted, repeatable
- Proven track record of transition from legacy
- Extensive library of supported devices with an accelerated certification process

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